



## RESUME OF LEE WILSON

### EDUCATION AND CERTIFICATION

Ph.D., Geology, Columbia University (1971). Specializations in geomorphology, hydrology, ecology (collectively what is today referred to as "environmental science").

B.A., Geology, Yale University (1964); minor in ecology.

Certified Professional Hydrogeologist #220 (American Institute of Hydrology).

### EXPERIENCE AT LEE WILSON AND ASSOCIATES

Since 1973, Dr. Wilson has been President of Lee Wilson and Associates (LWA), a water resource and environmental consulting firm based in Santa Fe, New Mexico. His work generally falls into three categories, each of which is discussed more fully below:

- Technical analysis of water resources for more than 500 projects;
- Author and project director for several dozen environmental management and impact evaluations, including 17 years as an EPA mission contractor;
- Expert testimony on a broad array of water resource and environmental issues in dozens of court and regulatory cases.

Also provided below is information on Dr. Wilson's experience in other areas of resource management while at LWA; and his work as administrator of a successful small business.

### WATER RESOURCES

The water resources projects that Lee Wilson has worked on have dealt with issues as follows.

- Water-supply master planning for municipalities and water authorities. Responsible for projecting water demands, design of conservation programs, assessing streamflow supplies on a probabilistic basis, evaluating well field performance, modeling and modeling oversight of well field impacts and reservoir operations, developing strategies for water rights acquisition, investigating water quality problems, designing wellhead protection programs, assessing water-resource regulations, and performing tradeoff analyses of water-supply alternatives based on engineering, economic, environmental and legal considerations.
- Evaluation of water quality impacts and/or clean-up programs for hazardous waste disposal, hydrocarbon leaks and spills, brine pits, coal mining and transport, power plant operations, pipeline construction, salt mining, geothermal development, septic

tanks, sewage lagoons, sludge disposal, land application of wastewater, feedlots, dairies, swine breeding facilities, aquaculture, natural saline seeps, watershed development, petrochemical manufacturing, other manufacturing, offshore oil and gas activities, disposal of dredged materials. Note that impacts to soils have been considered in many of these evaluations.

- Assessment of wastewater management alternatives, ranging from conventional treatment and discharge, to recycling alternatives including potable reuse; and evaluation of service area alternatives, especially extension of sewer lines to environmentally sensitive areas.
- Geotechnical/hydrologic components of four dozen dam safety inspections and seismic evaluations (for the Corps of Engineers and state agencies), and numerous other projects involving evaluation of flood hazards, Section 404 permits and/or stormwater management.

There are many specific LWA projects that display Dr. Wilson's ability to tackle complex and or unique issues. These include the following.

- Development of 70,000 acre-feet per year well field and acquisition of more than \$200 million in water rights in Canadian River Basin of Texas, through program of test drilling, data interpretation, and well design. Other work for this client -- the Canadian River Municipal Water Authority -- has involved hydrogeology investigations and conceptual design of a successful brine removal well system in the Canadian River Basin of New Mexico; reservoir firm yield and salinity evaluations; and assessment of hydrologic impacts of watershed brush control.
- Project manager and senior hydrologist for the Central Platte River groundwater and surface water modeling program (COHYST).
- Design of New Mexico's statewide program for groundwater quality monitoring, the first such program in the United States.
- Evaluation of numerous groundwater contamination events involving hydrocarbons, solvents, heavy metals, nitrates and other contaminants, for energy companies, major industrial companies, landowners and governments.
- Development of the nation's first set of criteria for use in evaluating full-scale potable recycling of wastewater (for the Hueco Bolson Recharge Project, El Paso Texas, now operational for more than 25 years).
- Design of EPA's prototype Wellhead Protection Program for Indian Lands.
- Development of the nation's first aquifer identification procedures and maps for EPA's Underground Injection Control Program.
- Writing of stream standards for seven Indian tribes in New Mexico.

- Assessment of runoff and contamination risks from Los Alamos National Laboratory, New Mexico, resulting from Cerro Grande wildfire.
- Support to State of Florida with respect to determining minimum stream flow requirements for the endangered Manatee population at Volusia Blue Spring; subsequent work for the past several years has involved peer review of minimum flow designations for rivers, lakes and springs throughout the St. Johns River Basin.
- Preparation of 33 county-level maps of aquifer vulnerability for the New Mexico Underground Storage Tank program (republished on New Mexico Environmental Department web site at <http://www.nmenv.state.nm.us/fod/LiquidWaste/aoc.html>).
- Performance of hydrologic and regulatory assessments of aquifer management rules for the Edwards Aquifer Authority, Texas; and quantified water-rights values for the Authority.
- Support to design and implementation of extensive studies to assess impacts of water appropriations on Guadalupe River, Texas, including effects on the endangered whooping crane.
- Consultant to Alcoa mining regarding permitting of industrial wells and securing of bond release at Sandow Mine, Texas.
- Active as water rights consultant for more than a dozen communities throughout New Mexico, responsible for oversight of water-rights transfers and compliance with state permit conditions; one example is our oversight of acquisition and transfer of more than \$30 million worth of water rights to the Village of Los Lunas; another is support to the City of Las Cruces in preparing a standalone water conservation plan.

## **ENVIRONMENTAL MANAGEMENT AND IMPACT ASSESSMENT**

Dr. Wilson's projects in environmental management and impact assessment include the following, which typically involve evaluations related to all aspects of the environment, including air, water, soils, biota, and human resources.

- LWA was selected in 1984 as level-of-effort NEPA contractor for EPA Region 6; this contract was re-awarded or extended annually for 17 years until our retirement in 2001. Under this contract, Dr. Wilson was the lead participant in over 60 work assignments that included: preparation of state-of-the-art reports on cumulative impacts, EIS post-audits, and NEPA risk assessments; author of a unique Record of Decision that effectively served as a biological opinion under the Endangered Species Act; team leader for EISs on a major lignite mine and power plant, a very large petrochemical plant, oil and gas activities in the Territorial Seas, and dredged materials disposal in the Atchafalaya Delta; team leader for EAs on surface coal mining and confined animal feedlot operations; and responsible for analysis of a Clean Lakes

Program project; a generic programmatic agreement for Section 106 of the National Historic Preservation Act; and an investigation of alternatives for beneficial use of dredge spoil in the Laguna Madre, Texas, and statewide in Louisiana and Texas. Note that work under our EPA contract that relates to coastal restoration is identified elsewhere in this resume.

- Prior to the EPA contract LWA prepared numerous impact statements, many of which were of special interest: the first third-party EIS performed in the U.S. (for EPA, on the City of Albuquerque wastewater treatment facilities); the first BLM grazing EIS that was completed without a court challenge (McGregor Range); a 1980 EIS that developed EPA's criteria for potable reuse of wastewater (City of El Paso); and a 1982 wastewater EIS (for EPA on Taos Ski Valley) which has been described as "exactly what CEQ wanted to accomplish when they reformed the EIS process".
- Lee Wilson served Alcoa Corp. as advisor for a controversial EIS prepared by a Third-Party consultant regarding a major coal mine project in Texas. Key issues included groundwater development, effects on endangered species, and the secondary effects of mine-supported energy generation and smelting. The EIS was not challenged.
- Current LWA work on impact issues includes preparation of assessments of arsenic treatment projects for the City of Albuquerque; and evaluation of water resource impacts for a Forest Service EIS being prepared on a major uranium mine, where large quantities of groundwater will be withdrawn for mine depressurization, and where issues of water quality are of importance to the local community; and for a BLM EIS on a copper mine where water issues are paramount.
- Our impact assessments of diverse project types have included: municipal flood control; in-situ copper mining; in-situ potash mining; the eutrophication effects of urban runoff; construction of a natural gas pipeline; the agricultural impacts of wastewater service extensions; the groundwater impacts (quantity/quality) at a large cooling reservoir constructed in karst terrain; construction/use of a limited access freeway; chemical manufacturing; a pulp and rayon mill; tribal wastewater disposal; trans-national air pollution; and arsenic treatment systems.
- Dr. Wilson also has taught courses on impact analysis. Course sponsors/venues include the Autonomous University of Mexico (Mexico City, 2 courses), FLACAM in Lima, Peru (students from 5 countries), VUB in Brussels, Belgium (students from 20 countries), and the Inter-American Development Bank in Jamaica (students from 10 Caribbean countries).

### **EXPERT TESTIMONY**

Dr. Wilson's experience as an expert witness includes the following.

- Current or recent expert designations and assignments in federal or state courts include: for Datacard and General Electric in a contamination case in California; for El Paso Corporation as a hydrogeology expert in several cases involving ground-water contamination in New York, Florida, New Jersey and New Hampshire; for Taos Pueblo as a water-rights expert in an adjudication case; for several New Mexico municipalities in cases involving protested water rights transfers; for a rock quarry in Texas with respect to well permitting; for acequia associations in the Rio San José Adjudication (New Mexico); for the City of Las Cruces in the Lower Rio Grande adjudication; and more. In the last year he has testified before a Federal Court in Dallas regarding groundwater contamination in Winkler County TX; an arbitration panel in Houston regarding soil and groundwater contamination in McAllen County, TX, and a New Mexico Hearing Officer in Santa Fe, regarding a water rights matter in Dona Ana County, NM.
- An example of testimony regarding groundwater contamination was for Fina and Dominion in a 7-year case involving hydrocarbon releases in McAllen, Texas. The project involved extensive research into local conditions of soil characteristics, groundwater hydrology and contamination, examination of potential sources including pipelines and old gas stations, and background research on diverse issues including mobility of phase-separated gasoline and fingerprinting of natural gas condensate.
- For the State of Florida, Dr. Wilson provided expert testimony in federal court cases regarding interstate water issues, especially relating to competition for streamflows between urban Atlanta, major recreational reservoirs, large-scale irrigation, and the environmental resources of the Apalachicola River floodplain and estuary in Florida.
- Dr. Wilson's past expert work for the State of Nebraska involved two U.S. Supreme Court cases regarding interstate water allocation. The more recent dealt with the Republican River Compact, where issues related to streamflow hydrology, groundwater modeling, Compact accounting, reservoir operations and water-rights administration. Dr. Wilson previously was a lead expert for Nebraska in its interstate litigation on the North Platte Decree; the issues there included protection of environmental flows for the critical habitat of the Whooping Crane; and municipal needs in Wyoming.
- Of past cases, the largest by far was Dr. Wilson's role as chief expert regarding water resource and environmental issues raised in federal litigation brought by a coal slurry pipeline against six railroads ("ETSI case"). This involved extensive research and focused testimony regarding the environmental impacts of coal slurry pipelines, including comparison of impacts to coal transport by unit trains; and regarding the genuineness of railroad protests to permits under the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Endangered Species Act and other statutes and regulations in South Dakota, Wyoming, Oklahoma, Arkansas, Texas and Louisiana.
- Another well-known expert appearance was as chief technical witness for the City of El Paso in its landmark challenge of a statute barring the interstate transport of

groundwater. There, testimony dealt with long-term municipal water supply needs; alternatives ranging from desalting to recycling; surface and groundwater impacts of a 296,000 acre-feet per year diversion; and diverse socio-economic issues related to water use and interstate commerce.

- Other past testimony and/or litigation advice has been provided in hazardous waste disposal, water rights, water rates and water quality cases for clients ranging from major corporations (Johnson and Johnson, Waste Management Inc., Phillips Petroleum, Marathon Oil, OXY Petroleum, Budget Rent-a-Car, ELF-Atochem) to environmental and citizen groups (Sierra Club, La Raza Unida). Dr. Wilson is currently involved in two remediation projects under jurisdiction of the Railroad Commission of Texas, one on behalf of a landowner, one on behalf of an oil and gas producer.

## **RESOURCE MANAGEMENT**

These projects involve specialized aspects of environmental and water resource management.

- LWA's EPA contract included extensive work in restoration of Louisiana's coastal wetlands. Dr. Wilson oversaw preparation of a handbook for managing wetlands impacts of oil and gas development; prepared ecosystem restoration plans and studies (such as a project to divert Mississippi River water to restore Lake Maurapas swamps -- the largest such project so far conceived); evaluated specific projects involving land management, mariculture and barrier islands; and helped write "Coast 2050", the master plan for achieving no net loss of wetlands.
- LWA has undertaken a number of specialized studies aimed at the innovative management of environmental resources. Lee Wilson invented a method by which water supply is quantified and used as the basis of land use density zoning (for Santa Fe County, NM); created a standardized list of subdivision covenants for water conservation; performed the nation's first size-partitioned inventory of fugitive dust, which involved all natural as well as man-related particulate sources in a desert area with numerous tailings piles, copper mines, mills and unpaved roads; prepared the conceptual scope for City of Albuquerque's hazardous waste management master plan; drafted an environmental code for City of Santa Fe, dealing with issues which range from toxic air pollutants to electromagnetic radiation from power lines; and input to design of a project to restore the hydrology of a sacred wetland on Taos Pueblo.

## **ADMINISTRATION OF A SUCCESSFUL SMALL BUSINESS**

Lee Wilson's work as President of LWA has required him to accomplish the following.

- Administer an average of 20 to 30 contracts per year (total annual value averaging > \$1,000,000) with government agencies and private companies (almost all repeat clients), to ensure compliance with schedules, budgets and client needs.
- Supervise interdisciplinary research teams of up to 30 members, while performing technical research in a variety of water-resource and environmental disciplines.
- Write most and edit all company reports and make oral presentations of findings to clients, regulatory agencies, and the public.
- Assure quality control so that all work is imaginative, practical, objective and cost-effective.

#### **PRIOR EXPERIENCE, ACCOMPLISHMENTS, HONORS AND PUBLICATIONS**

- 1972-1973. Senior Staff Scientist with an environmental consulting firm based in New York City and Dallas, responsible for preparing more than a dozen major EISs and assessments in California, Indiana, New York, North Carolina, Pennsylvania and Texas; projects included large water supply and flood control reservoirs, landfills, coal-fired power plants and land development.
- 1965-1971. miscellaneous short-term assignments, including observer-member of an Australian government team performing an inventory of soil, water and biological resources in the Northern Territory; and lecturer in geology, geomorphology, Pleistocene geology and geophysics at Columbia University, Briarcliff College and Brock University.
- LWA was selected by EPA in its 1994 National Award for Outstanding Achievements as a Small Business Contractor.
- Columbia University Fellowship for advanced study in remote sensing at International Training Center, Delft, Netherlands (1969-70)
- NSF Summer Institute Fellowship in hydrology/hydraulics, Colorado State University (1968).
- Food Fair National Scholar, Yale University, 1960-64
- Member of more than one dozen professional and environmental organizations, including Geological Society of America (Elected Fellow) and National Wildlife Society (Life Member).
- Member of the International Association for Impact Assessment; Chairman of Training and Professional Development Committee (2003-2007; in 2004 received IAIA's award for Outstanding Service.

- For LWA, author of more than 400 technical reports, many distributed widely by government agencies.
- Ten contributions to the Encyclopedia of Earth Sciences series. Scientific articles published in: Groundwater; Water Resources Research; Water Resources Bulletin; American Journal of Science; Bulletin of the International Association of Hydrology; Bulletin of the Geological Society of America; Rev. Geographique Physique et de Geologie Dynamique; EIS Annual Review; Environmental Impact Assessment Review; Journal of Soil and Water Conservation; American Water Works Association Proceedings; Physical Geography.
- Keynote speaker at UNESCO symposium on erosion and sedimentation, Paris, 1977; member of AWRA scientific exchange program with the Peoples Republic of China (1985); member of City of San Antonio delegation to Kumamoto, Japan, water conference (1990); member of EPA/DOE international workshop on EIS methodology (1991); keynote speaker New Mexico Legislature water retreat (2000); member of Advisory Council for the Caroline and William N. Lehrer Distinguished Chair in Water Engineering at Texas A&M University's Biological and Agricultural Engineering Department (2005).

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